

Claims

1. A method of producing a gas generator housing part of a thin-walled tube (22, 24) and a connecting piece laterally mounted thereto, characterized by the following steps:

- 5           a)     providing a tube (22, 24) having a wall thickness (WS) which amounts to a maximum of 10 % of a tube external diameter (D) and a minimum tensile strength which amounts to at least approximately 800 N/mm<sup>2</sup>;
- b)     providing a connecting piece having an external diameter (do) which amounts to between 15 % and 40 % of said tube external diameter (D);
- 10           c)     aligning said connecting piece radially to said tube (22, 24) such that an end face (78) of said connecting piece faces an outer face of said tube (22, 24);
- d)     joining said tube (22, 24) and said connecting piece by friction welding, by producing a relative rotation between said tube (22, 24)
- 15           and said connecting piece and moving said tube (22, 24) and said connecting piece towards each other,
- e)     providing a maximum welding time amounting to less than 1 sec, preferably less than 0.3 sec and
- f)     providing a friction depth (h) amounting to less than 80 % of said wall
- 20           thickness (WS) of said tube (22, 24).

2. The method according to Claim 1, characterized in that said tube (22, 24) has a welding surface which is non-machined before said friction welding process.

3. The method according to Claim 1, characterized in that said tube (22, 24) has a peripheral wall (42, 44) with a wall thickness (WS) of a maximum of 2.5 mm, preferably a maximum of 2 mm.

4. The method according to Claim 1, characterized in that a through bore (52) is drilled into said connecting piece after welding, said bore (52) being connected with an interior of said tube via a lateral opening in said peripheral wall (42, 44) produced after welding.

5        5. The method according to Claim 1, characterized in that said connecting piece has a smaller diameter end on a tube side.

6. The method according to Claim 5, characterized in that said smaller diameter end, with said connecting piece welded on, forms a groove in which a weld bead (80) is situated.

10       7. The method according to Claim 6, characterized in that said weld bead (80) lies entirely inside said groove.

8. The method according to Claim 6, characterized in that said weld bead (80) produced is not reworked.

15       9. The method according to Claim 6, characterized in that before welding, said connecting piece has a flat end face (78) on said tube side.

10. The method according to Claim 9, characterized in that before welding, said connecting piece is solid at an end on said tube side.

11. A gas generator produced by a method comprising the following steps:

- 20       a) providing a tube (22, 24) having a wall thickness (WS) which amounts to a maximum of 10 % of a tube external diameter (D) and a minimum tensile strength which amounts to at least approximately 800 N/mm<sup>2</sup>;
- b) providing a connecting piece having an external diameter (do) which amounts to between 15 % and 40 % of said tube external diameter (D);
- 25       c) aligning said connecting piece radially to said tube (22, 24) such that an end face (78) of said connecting piece faces an outer face of said tube (22, 24);

- d) joining said tube (22, 24) and said connecting piece by friction welding, with producing a relative rotation between said tube (22, 24) and said connecting piece and moving said tube (22, 24) and said connecting piece towards each other,
  - 5 e) providing a maximum welding time amounting to less than 1 sec, preferably less than 0.3 sec and
  - f) providing a friction depth (h) amounting to less than 80 % of said wall thickness (WS) of said tube (22, 24),
- characterized in that said connecting piece is hollow and holds an igniter (40)
- 10 which is connected with an interior of said tube via a through-bore (52) provided in said connecting piece.
12. The gas generator according to Claim 11, characterized in that a combustion chamber (16, 18) containing a pyrotechnic material is provided in said interior of said tube.
- 15 13. A gas bag module including a gas generator (10) as claimed in Claim 11 and a generator holding plate (60), characterized in that said connecting piece is a device for fastening said gas generator (10) to said generator holding plate (60).